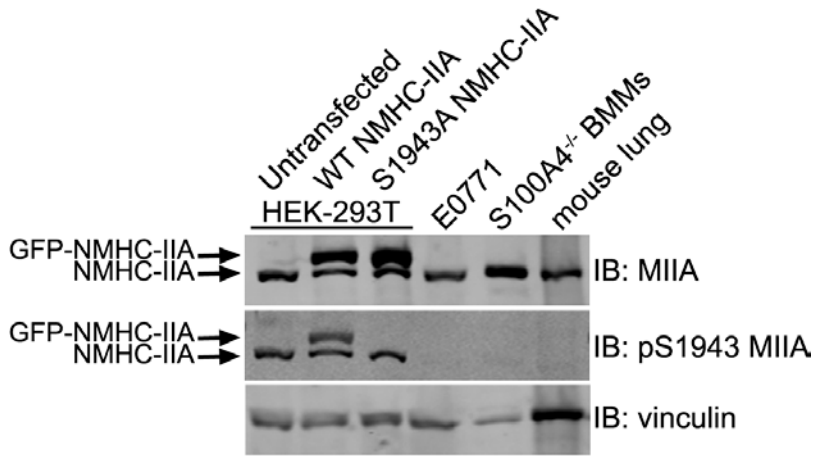
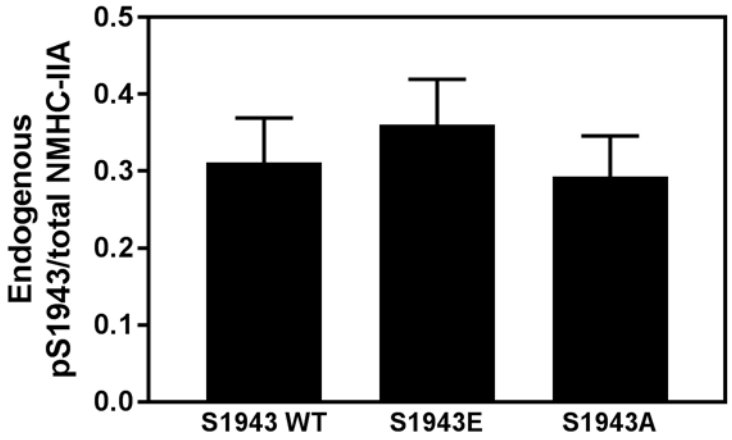
Supplemental Figures

Supplemental Figure 1



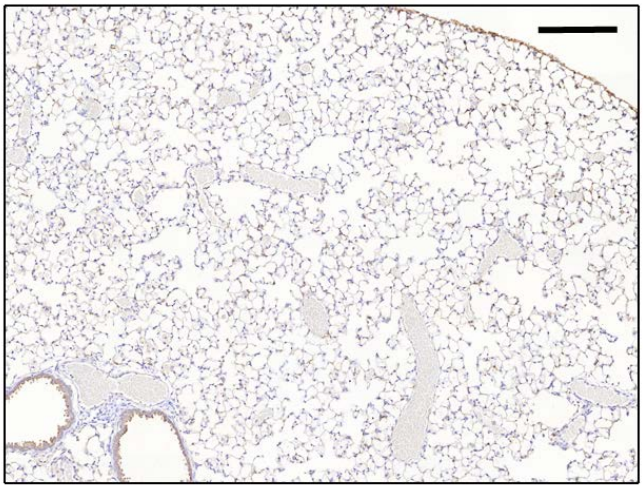
Supplemental Figure 1. Characterization of Cell Signaling pS1943 NMHC-IIA antibody. Representative immunoblots showing expression of endogenous NMHC-IIA or human GFP-tagged NMHC-IIA, pS1943 NMHC-IIA and vinculin in HEK-293T cells, E0771 mouse mammary tumor cells, S100A4$^{-/-}$ bone marrow derived macrophages (BMMs) and mouse lung tissue.

Supplemental Figure 2



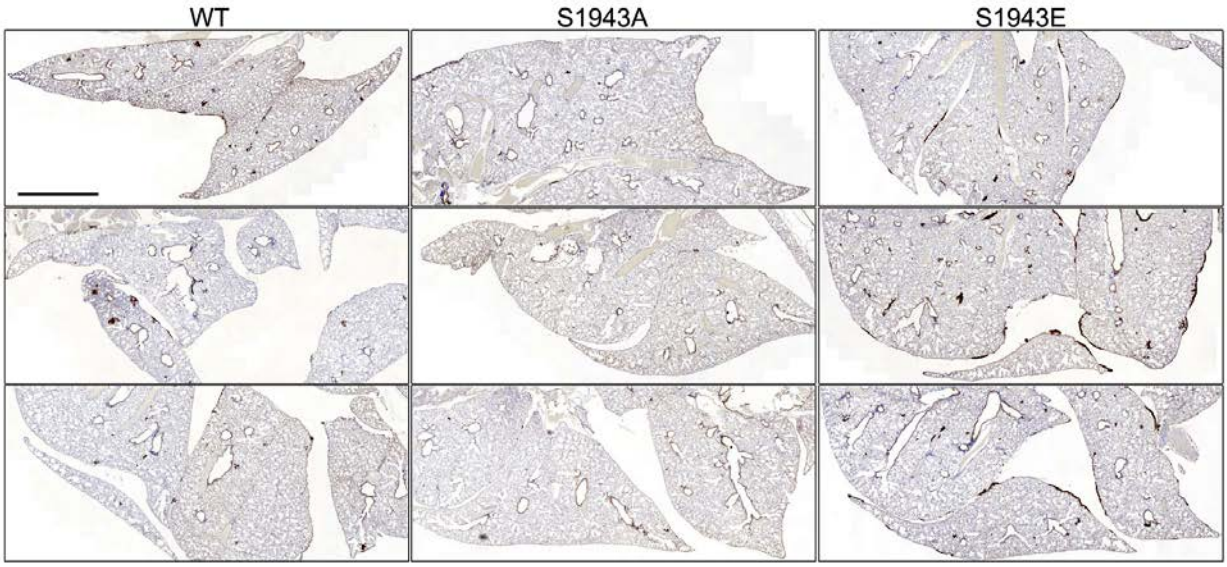
Supplemental Figure 2. Levels of endogenous pS1943-NMHC-IIA in cells expressing GFP-tagged wild-type, S1943E or S1943A NMHC-IIA. Immunoblot analysis showing the ratio of pS1943/total NMHC-IIA for the residual endogenous NMHC-IIA in MDA-MB-231 knockdown cells expressing mouse GFP-tagged NMHC-IIA phosphorylation mutants. Data represent the mean ± SD from 2 independent experiments.

Supplemental Figure 3



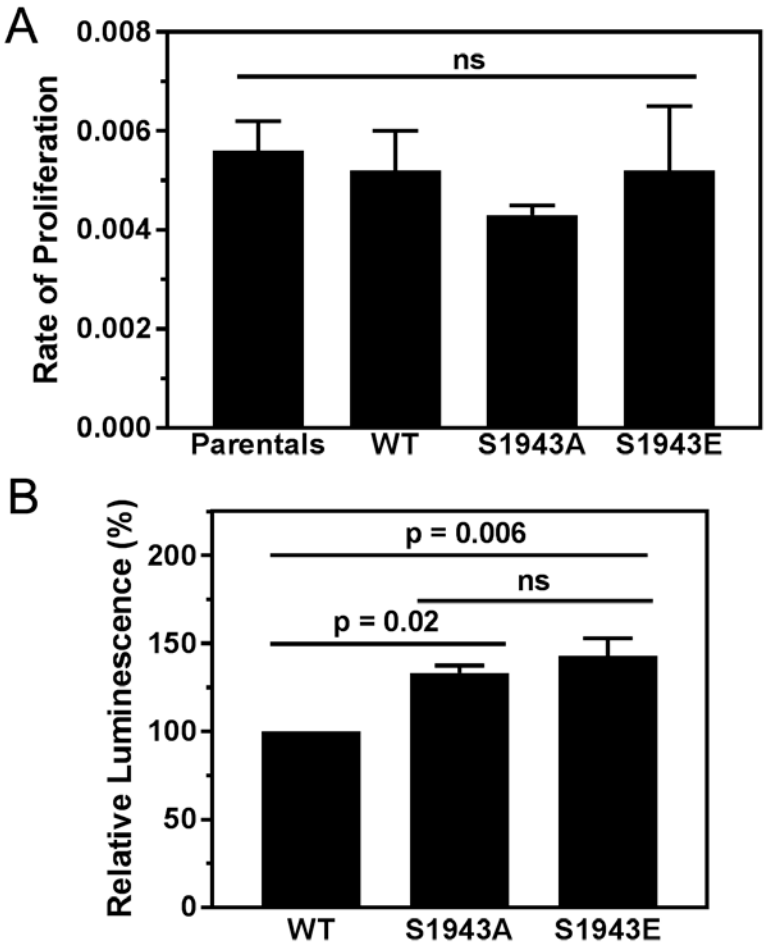
Supplemental Figure 3. Immunohistochemistry of naïve mouse lung. Naïve SCID mouse lung stained with a human pan-cytokeratin antibody. Scale bar = 200 µm.

Supplemental Figure 4



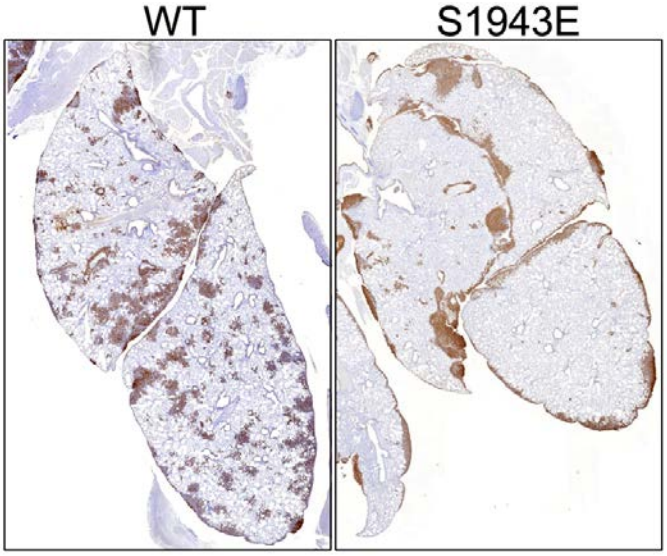
Supplemental Figure 4. Experimental metastasis assay. Pan-cytokeratin stained lung sections from SCID mice 6 weeks after mice injection with MDA-MB-231 cells expressing wild-type, S1943A or S1943E NMHC-IIA. Scale bar = 2 mm.

Supplemental Figure 5



Supplemental Figure 5. Proliferation assays for parental MDA-MB-231 cells or MDA-MB-231 NMHC-IIA knockdown-replace MDA-MB-231 cells. (A) Proliferation assay for cells cultured in 2D. Data represent the mean ± SEM from 3 independent experiments performed in duplicate. Statistical analyses were performed using ANOVA. **(B)** Proliferation assay for cells cultured in 2D. Data represent the mean ± SEM from 3 independent experiments performed in triplicate. Statistical analyses were performed using ANOVA.

Supplemental Figure 6



Supplemental Figure 6. Experimental metastasis assay. Pan-cytokeratin stained lung sections from SCID mice 8 weeks after injection with MDA-MB-231 cells expressing wild-type, or S1943E NMHC-IIA.